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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Ghassan Semaan

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EXAMINER

ELALLAM, AHMED

ART UNIT

PAPER NUMBER

2662

DATE MAILED: 08/15/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/658,778	SEMAAN, GHASSAN	
	Examiner	Art Unit	
	AHMED ELALLAM	2662	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 May 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This communication is responsive to amendment filed on 5/18/2005. The amendment has been entered.

Claims 1-21 are pending.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

1. Claims 18 and 20 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Regarding claims 18 and 20, the specification as originally filed does not describe any structure such as buffer, a memory or a storage medium or any step of for the claimed "storing data from two or more logical channels within a single one of the SONET data frame". Similarly the specification as originally filed does not describe the feature of "the first circuit is further configured to store data from two or more logical channels within a single one of the SONET data frame" as in claim 20.

Applicant is required to cancel claims 18 and 20 as been having new subject matter.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

2. Claims 1-14, 19 and 21 are rejected under 35 U.S.C. 102(e) as being anticipated by Chen et al, US (6,501,758).

Regarding claim 1, Chen discloses a fiber ring (SONET ring) system in which a STS level signals, or combinations of STS level signals are used, the system facilitates effective and efficient communication of ATM and TDM traffic over the common fiber ring. The system, through a variety of configurations and modes of operation, provides

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flexibility in the distribution of bandwidth between ATM and TDM traffic. Column 4, lines 43-62, Column 6, lines 66-67 and column 7, lines 1-14. (Corresponding to claimed subdividing a portion of data frames comprising a SONET layer into two or more logical channels, each logical channel having associated therewith a predetermined bandwidth capacity). Chen further discloses that virtual path automatic protection switching (VP APS) is used for STS/ATM traffic, and uni-directional path-switched ring protection is offered to STS/TDM traffic. And adjustment of the bandwidth allotted to either traffic type is accomplished provisioning the STS paths accordingly. See column 8, lines 24-39. (Corresponding to assigning a protection mechanism to each logical channel). Chen further discloses an automatic protection switching selector within a node in the fiber ring that chooses incoming signals from either working or protection channels depending on the configuration of the circuit and whether a fault has been detected. In a particular mode of operation, where ring 12 is configured as a bi-directional line-switched ring, automatic protection switching selector identify predetermined ATM - carrying channels and disables line switching protection for these pre-designated ATM - carrying channels. Column 12, lines 8-21. (Corresponding to monitoring the SONET ring transmission to determine protection mechanisms associated with each logical channel).

Chen discloses having ATM and TDM traffic mapped to an OC-12 frame, the OC-12 frame having 12 STS-1 payloads. See column 4, lines 40-43), (an OC-12 frame has 12 STS-1 signals, see column 3, lines 14-16). (Claimed each SONET data frame includes a plurality of logical channels).

Regarding claim 2, Chen discloses STS level signals, or combinations of STS level signals are used, See column 4, lines 43-62, column 6, lines 66-67 and column 7, lines 1-14. (Corresponding to SONET data frames comprise a plurality of STS level one frame).

Regarding claim 3, Chen discloses that virtual path automatic protection switching (VP APS) is used for STS/ATM traffic, and uni-directional path-switched ring protection is offered to STS/TDM traffic. See column 8, lines 24-39. (Corresponding to the protection mechanism comprise one of a layer1 SONET protection mechanism and a layer 2 protection mechanism).

Regarding claim 4, with reference to Figure 1, Chen discloses that System 10 facilitates effective and efficient communication of ATM and TDM traffic over a common fiber ring. Through a variety of configurations and modes of operation, system 10 provides flexibility in the distribution of bandwidth between ATM and TDM traffic. For example, if one type of traffic dominates the ring, system 10 can be configured to focus the majority of its resources on communicating that type of traffic. In addition, by providing ATM layer processing functionality at least some of nodes 14 on fiber ring 12, system 10 facilitates a high granularity in switching ATM information carried in STM signals. Column 2, lines 37-58. (Corresponding to limitation of claim 4).

Regarding claims 5 and 6, Chen discloses that Fiber ring 12 may comprise, for example, a two-fiber ring configured in a uni-directional path-switched ring (UPSR) mode, or a bi-directional path-switched ring (BLSR) mode.

Regarding claim 7, with reference to Figure 1, Chen discloses that System 10 facilitates effective and efficient communication of ATM and TDM traffic over a common fiber ring. Through a variety of configurations and modes of operation, system 10 provides flexibility in the distribution of bandwidth between ATM and TDM traffic. For example, if one type of traffic dominates the ring, system 10 can be configured to focus the majority of its resources on communicating that type of traffic. In addition, by providing ATM layer processing functionality at least some of nodes 14 on fiber ring 12, system 10 facilitates a high granularity in switching ATM information carried in STM signals. Column 2, lines 37-58. (Corresponding to Layer2 protection mechanism comprises at least one of: an Ethernet protection mechanism, an Asynchronous transport mode protection mechanism, or a time division multiplexing protection mechanism).

Regarding claims 8-14, claims 8-14 are apparatus claims and have substantially the same scope of respective method claims 1-7, thus they are subject to the same rejection.

Regarding claims 19 and 21, Chen discloses transmitting hybrid traffic ATM/TDM over a common fiber ring. See abstract, column 1, and lines 32-62. (claimed one or more logical channels of the SONET layer are transmitted over a common fiber channel).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chen in view of Bisson et al, US (6,349,092).

Regarding claim 15, Chen discloses that VT (Virtual tributary) traffic is carried within the transport Signals (data frame). see column 3, lines 1-24, but it does not explicitly disclose that the VT is VT-1.5.

However, Bisson discloses that SONET defines synchronous signals known as virtual tributaries (VTs) to transport lower speed signals and that VTs operate at four levels below STS-1. The four defined sizes of VTs are VT-1.5 (1.728 Mbps) for DS1 signals, VT-2 (2.304 Mbps) for CEPT-1 signals, VT-3 (3.456 Mbps) for DS1C signals, and VT-6 (6.912 Mbps) for DS2 signals. Within an STS-1 frame, each VT occupies a portion of the frame. Within the STS-1, different VT groups can be mixed together to form one STS-1 payload. See column 5, lines 3-11.

Therefore, it would have been obvious to an ordinary person of skill in the art, at the time the invention was made to have the VT frames of Chen comprise VT 1.5 level frames so that lower speed signal can be provided.

4. Claim 16 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chen.

Regarding claims 16 and 17, Chen discloses STS level signals, or combinations of STS level signals are used, See column 4, lines 43-62, column 6, lines 66-67 and column 7, lines 1-14.

Chen does not explicitly disclose that the STS-1 frame are non-contiguous.

However, it would have been obvious to an ordinary person of skill in the art, at the time the invention was made to have the STS-1 frames of Chen being non-contiguous or contiguous as required by the type of data, such as time-sensitive (i.e. TDM data) or non time-sensitive data (i.e. ATM data).

5. Claims 18 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chen in view of Neuendorff et al, US (6,657,969).

Regarding claims 18 and 20, Chen does not explicitly disclose storing data from the STS frames (two or more logical channels) within a single one of the SONET data frame.

However, Neuendorff discloses in the same field of SONET ring technology, storing data from a plurality of STS frames within a SONET frame in each node of the ring. See abstract, column 2, and lines 25-63.

Therefore, it would have been obvious to an ordinary person of skill in the art, at the time the invention was made to store data within STS frame of SONET frame as taught by Neuendorff in the nodes of Chen so that prevention of losing data can be

prevented upon the occurrence of failure in the working ring, as well as fast recovery from failures (Neuendorff, col. 2, lines 59-63).

Response to Argument

6. The objections to the specification and the drawings are withdrawn in view of the amendment.

35 USC § 112 rejections:

Claims 19 and 21:

Applicant's Amendment to claims 19 and 21 overcomes the 112 rejections.

Claims 18 and 20:

Applicant argues that *"the SONET frame has multiple logical channels, Thus, the first circuit implementing the embodiment is capable of storing multiple channels within a single SONET data frame as claimed and the claims are not new matter"*. Emphasis added. Examiner respectfully disagrees, Applicant argument is not an evidence, there is no where in the specification as originally filed an indication of storing data from two or more logical channels within a single one of the SONET data frame" as indicated in the added claims 18 and 20. Examiner concludes that arguing that the claimed "circuit (control card 520) **is capable of** storing multiple channels within a single SONET data frame" is not persuasive, because it is merely based on speculations and not evidence. The rejections of claims 18 and 20 are maintained of being proper.

102 rejection:

Claims 1 and 8:

Examiner maintains all traversal arguments presented in the last office action mailed on 1/18/2005.

Response to Arguments filed on 5/18/2005:

Applicant on page 15, maintains the argument that Chen cannot be relied upon to teach or suggest all features of the claims, given claims 1 and 8 as examples, more specifically the claimed “ *subdividing a payload portion of at least one of the SONET data frames into one or more logical channels*”. Applicant argues that *Chen does not show a payload of a SONET frame including both ATM and TDM signals*, page 16, first paragraph. (Emphasis added).

Applicant on page 16 argues that “*To the extent that payload is discussed at all, Chen strongly indicates that each payload carries only one type of information – either ATM or TDM. In other words, both types **cannot be part of a single payload**.*” (Emphasis added).

Applicant referred to Figures 4a-4c and passages from the Chen reference, especially column 13, lines 7-9, lines 23-37, lines 49-column 14, line 7, lines 59-62-column 15, line 2. Applicant concludes his argument by alleging that the TDM and ATM information are **carried in separate paths**. And that clearly implies that the TDM and ATM information cannot be part of a single payload and thus **cannot be part of one SONET frame**.(page 18 second paragraph).

Examiner respectfully traverse Applicant’s arguments, because Chen does not explicitly or implicitly discloses that ATM and TDM data are not part of the same SONET

frame, Applicant's own conclusion is based on erroneous interpretation of Chen's teaching.

The teaching of Chen stated by Applicant in which the incoming signals to be transported over the fiber ring are separated based on whether the signals are TDM or ATM... and "Switched transport signals containing TDM information are mapped into a first synchronous envelope" at step 760 and "Switched transport signals containing ATM cells are mapped into a second synchronous envelope" at step 765". See page 17 first and second paragraph; these teachings are in fact contrary to Applicant's conclusions. More specifically, the separation of incoming TDM and ATM signal and the mapping of these signals into separate synchronous envelopes are the steps necessary to have the payloads of the SONET frame divided so it accommodates each separate payload in a respective STS frame of the SONET frame. Applicant misinterpreted the synchronous envelope of Chen, a synchronous envelope in accordance with the SONET standard is the STS of Applicant, for example Applicant's figure 4, shows a plurality of STS blocks, within a SONET frame, and to state having both type of payloads can not be part of a single payload is contradictory to Applicant's own teaching. Applicant figure 5 shows different payloads (STS payloads that carry different type of traffic) within the same SONET frame.

With respect to the argument that the TDM and ATM information are **carried in separate paths, and cannot be part of one SONET frame**. Examiner respectfully disagrees, because ATM and TDM are mapped into respective synchronous envelopes, while the data mapped in synchronously enveloped may be taking a different path they

still belong to the same SONET frame, because of the **synchronous** nature of the SONET frame, and data can take different paths while the recovery of the transmitted SONET frame is carried out in the receiving node in a synchronous fashion.

Examiner, concludes that Chen have strong evidence that TDM and ATM payloads are mapped into STS envelope belonging to the same SONET frame, for example Chen discloses having ATM and TDM traffic mapped to an OC-12 frame (**SONET frame**), the OC-12 frame having 12 STS-1 payloads. See column 4, lines 40-43 (an OC-12 frame has 12 STS-1 signals, see column 3, lines 14-16). Therefore having both ATM and TDM payloads distributed in the OC-12 frame for transmission along a flexible bandwidth distribution between ATM and TDM (column 4, lines 43-62, Column 6, lines 66-67 and column 7, lines 1-14) is a clear evidence that contradict all Applicant's arguments with regard to Chen teaching.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: Tanigushi, US (6,674,771); Sandstrom, US (6,697,373); and Kovvali et al, US (6,920,113)

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not


mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to AHMED ELALLAM whose telephone number is (571) 272-3097. The examiner can normally be reached on 9-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kizou Hassan can be reached on (571) 272-3088. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

AHMED ELALLAM
Examiner
Art Unit 2662
08/09/2005


JOHN PEZZLO
PRIMARY EXAMINER